

Appl. No. 10/041,144
Amdt. Dated June 1, 2005
Reply to Office Action of March 9, 2005

Attorney Docket No. 81784.0247
Customer No. 26021

REMARKS/ARGUMENTS

Claims 1-10 were pending in the application. By this amendment, new claims 11-16 are presented in order to advance the prosecution of the application. No new matter is involved.

In paragraph 2 which begins on page 2 of the Office Action, claims 1-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,990,952 of Hamasaki in view of U.S. Patent 4,686,573 of Murayama et al. This rejection is respectfully traversed.

In accordance with the present invention, information charges generated in odd and even lines during a first period A are respectively accumulated, and the information charges generated in an odd line are compounded into the information charges generated in an even line. With this, information charges in the odd line results in G(2A), while information charges in the even line result in zero.

During a following second period B, information charges are further accumulated in the odd and even lines, respectively. With this, information charges in the odd line result in G (2A +B), while information charges in the even line result in G (B).

In Hamasaki, on the other hand, information charges generated in photodiodes of odd and even lines during the first period A are respectively accumulated, and then mixed in a vertical register, whereby main information charge “ $Q_1+Q_2=G(2A)$ ” is obtained, with no information charges left in the photodiodes of odd and even lines. During a following second period B, information charges are newly generated and are respectively accumulated in the odd and even lines, and again mixed in the vertical shift register, whereby auxiliary information charge “ $Q'_1+Q'_2=G(2B)$ ” is obtained.

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Further in accordance with the present invention, two types of information charges $G(2A+2B)$ and $G(B)$, which are generated, have remarkably different characteristics relative to the amount of incident light. Specifically, a large amount of information charges $G(2A+B)$ are accumulated even relative to a small amount of incident light, and information charge $G(B)$ unlikely reaches a saturation point even relative to a large amount of incident light.

According to Hamasaki, on the other hand, the characteristics of the two kinds of information charges $G(2A)$ and $G(2B)$ relative to the amount of incident light are not as large as in the present invention.

Similarly, Murayama et al. neither discloses nor suggests the characteristic features in accordance with the present invention which are described above.

Claims 1-10 are submitted to clearly distinguish patentably over the prior art. Such, claims define a method in accordance with the present invention in which information charges generated in odd and even lines during a first period are respectively accumulated, and the information charges generated in an odd line are compounded into the information charges generated in an even line. Information charges in the odd line results in $G(2A)$, while information charges in the even line results in zero. According to the claims, during the following second period, information charges are further accumulated in the odd and even lines, respectively. Information charges in the odd line result in $G(2A+B)$, while information charges in the even line result in $G(B)$.

Similarly, new claims 11-16 define methods in accordance with the present invention which incorporate the features in accordance with the invention described above and which therefore patentably distinguish over the cited art.

In conclusion, claims 1-16 are submitted to clearly distinguish patentably over the prior art. Therefore, reconsideration and allowance are respectfully requested.

Appl. No. 10/041,144
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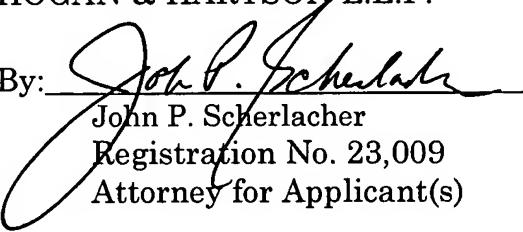
Attorney Docket No. 81784.0247
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If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6846 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
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Date: June 1, 2005

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